WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
MONTANA

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed on the last page of this report

AS OF
MAR. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RIGHTS BR., DEPT. OF LANDS, FORESTS AND NATURAL RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK

FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

for

MONTANA

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MONTANA
WATER SUPPLY OUTLOOK
February 1, 1963

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* * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                 *
* The current water supply outlook for the coming  *
* irrigation season varies from Good in the Upper  *
* Clark Fork, Musselshell, and Gallatin River      *
* drainages to Poor in the Red Rock, Beaverhead    *
* and Marias River drainages.  Generally, all      *
* Montana streams will have less than average flow *
* this spring and summer.                          *
*                                                 *
* * * * * * * * * * * * * * * * * * * * * * * * * *
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Streamflow is expected to be 15 to 25 percent below average on the Kootenai, Flathead and Clark Fork River drainages. Headwater streams in the Upper Clark Fork basin are forecast to flow 5 to 15 percent less than average. Some late season shortage of irrigation water can be expected in the Bitterroot drainage, particularly those streams originating on the west side of the valley.

East of the Continental divide, streamflow is forecast to be 50 to 60 percent of average on the Red Rock-Beaverhead drainage, tributary streams to the Madison River, and on the Marias River drainage. Other drainages are expected to produce 60 to 90 percent of average flow with the exception of the Gallatin and Musselshell Rivers where near average streamflow is forecast.

Snow surveys made near the first of March indicate the mountain snow pack in the Kootenai River drainage is 76 percent of last year and 65 percent average. In the Flathead drainage it is 71 percent of last year and 69 percent average. The Lower Clark Fork area has a 69 percent average pack, which is 65 percent of last year. In the Upper Clark Fork basin, the mountain snow is 8 percent less than last year and 5 percent below the 1943-57 average. The Bitterroot drainage is covered with a deficient snow pack, being only 64 percent of last year and 61 percent of average.

East of the Continental divide, the Jefferson River drainage has a snow pack that is 72 percent of last year and 71 percent average, with better conditions present on the north portion of the drainage. The Madison basin has a cover of only 49 percent of last year and 56 percent of average. In the Gallatin the pack is 77 percent of last year and 94 percent average. Along the main stem of the Missouri the snow pack is 82 percent of last year and 79 percent average. Farther north, in the Sun, Teton and Marias drainages, there is only 56 percent of last year or one-half average snow pack. The Musselshell-Judith area has nearly the same amount of snow as last year and is 8 percent above the average. The Yellowstone drainage has a snow cover that is 71 percent of last year and 80 percent average.

Irrigation reservoir storage is generally near average with the exception of the Marias and Milk River basins where storage is below average.

Storage in power and multi-purpose reservoirs is generally above average.

SNOW SURVEY COURSES
AND SOIL MOISTURE STATIONS
IN
MONTANA
LEGEND
TOWNS AND CITIES
1304 SNOW SURVEY COURSE
1304M SOIL MOISTURE STATION
DRAINAGE BOUNDARIES
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA
SCALE IN MILES
REVISED 12-62
5,R-11,484
KOOTENAI
ST. MARY
MILK
MARIAS
MILK
FLATHEAD
TETON
SUN
MAIN STEM
BLACKFOOT
MISSOURI
JUDITH
MUSSELSHELL
LOWER YELLOWSTONE
BITTERROOT
CLARK FORK
BIG HOLE
JEFFERSON
RUBY
MADISON
GALLATIN
UPPER YELLOWSTONE
BEAVERHEAD
IDAHO
SOUTH DAKOTA
MONTANA
WYOMING
SHELBY
HAVRE
GLASGOW
FORT PECK RESERVOIR
KALISPELL
COLUMBIA FALLS
HERON
THOMPSON FALLS
POLSON
PLAINS
CHOTEAU
AUGUSTA
GREAT FALLS
LEWISTOWN
HARLOWTON
MISSOULA
ORANDO
HELENA
HAMILTON
DARBY
ANACONDA
BUTTE
WILSALL
BOZEMAN
LIVINGSTON
BILLINGS
MILES CITY
DILLON
GORWIN SPRINGS
RED LODGE

INDEX TO MONTANA SNOW COURSES AND SOIL MOISTURE STATIONS

INDEX TO MONTANA SNOW COURSES AND SOIL MOISTURE STATIONS

Drainage Basin & Course Name	Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates 1/	Measured By 2/
			COLUMBIA RIVER BASIN					
KOOTENAI RIVER								
Bersee Creek	15B11	5500	6	25N	30W	1937	4,5,5½	2
Brush Creek	14A4	5000	13	30N	26W	1937	3,4,5	1,2
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5,5½,6	1,2
Weasel Divide	14A7	5450	8	37N	24W	1937	3,4,5,5½,6	1,2
FLATHEAD RIVER								
Basin Creek	13B14A	5000	11	19N	12W	1951	2,3,4,5	1
Bassoo Peak	14B3	5150	11	24N	25W	1960	3,4,5	1,5
Big Creek	13B3	6750	7	22N	18W	1941	3,4,5 6	1,5
Camp Misery	13A17	6400	30	28N	18W	1962	3,4,5	1,2
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5 6	1,2
Fatty Creek	13B4	5500	4	22N	18W	1962	3,4,5, 6	1,5
Griffin Creek Divide	14A9	5150	11	28N	25W	1960	3,4,5	1,5
Hell Roaring Divide	14A3	5770	35	32N	22W	1942	3,4,5,5½,6	1
Holbrook	13B13A	4530	18	21N	13W	1951	2,3,4,5	1
Kishenehn	14A6	3886	14	37N	22W	1954	3,4	6
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	1,2
Marias Pass	13A5	5250	34	30N	14W	1934	1,2,3,4,5	3
Mineral Creek	13A16	4000	29	35N	17W	1939	3,4	6
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4,5,5½,6	1,5
Quinkokon	13A13	3800	11	26N	17W	1951	4	1,2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	1,2,3,4,5	1,2
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5	1
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5	1
Trout Lake	13A12	3600	21	28N	17W	1948	1,2,3,4,5	1,2
Twin Creeks	13B11	3580	14	26N	16W	1951	3,4,5	1,2
Upper Holland Lake	13B5	7000	28	20N	16W	1948	3,4,5	1
CLARK FORK RIVER								
Black Pine	13C13	7100	23	8N	15W	1959	3,4,5	1
Copper Creek	12B10	5700	1	15N	9W	1962	3,4	1
Cotter Mine	12B11	6250	2	15N	9W	1962	3,4	1
Coyote Hill	13B10	4200	12	18N	16W	1947	1,2,3,4,5	1,2
El Dorado Mine	13B9	7800	23	8N	12W	1949	3,4	1
Fred Burr Pass	13C11	8000	12	6N	13W	1957	3,4,5	1
Gold Creek Lake	13C10	7200	14	8N	12W	1949	3,4	1
Hoodoo Creek	15C1	6200	9	14N	27W	1937	3,4,5	1,2
Intergaard	13C4	6450	6	5N	13W	1936	2,3,4	4
Lubrecht Forest #6	13C8	4040	11	13N	14W	1951	1,2,3,4,5	8
Red Lion	13C12	7000	27	6N	13W	1958	3,4,5	1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	3,4,5,5½,6	1
Slide Rock Mt.	13C2	7100	35	10N	16W	1937	3,4,5	1
Southern Cross	13C5	6500	8	5N	13W	1936	2,3,4	4
Storm Lake	13C7	7780	19	4N	13W	1939	1,2,3,4,5	1
Stuart Mill	13C6	6500	19	5N	13W	1936	2,3,4	4
T.W. Mountain	14B1	6800	33	15N	19W	1956	1,2,3,4,5	1
BITTERROOT RIVER								
Ambrose	13C16	6475	28	9N	18W	1960	3,4,5	1
East Fork R.S.	13D1	5400	16	2N	17W	1937	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5,5½,6	1,3
Lost Horse	14C7	5940	5	4N	23W	1960	3,4,5	1
Nez Perce Camp	14D2	5580	19	1S	23W	1937	3,4,5	1
Nez Perce Pass	14D1	6575	25	1S	24W	1937	3,4,5	1
Twin Lakes	14C8	6510	32	5N	23W	1960	3,4,5	1
			SASKATCHEWAN RIVER BASIN					
ST. MARY RIVER								
Iceberg Lake #3	13A3	5600	34	36N	16W	1922	5	3,9
Josephine Lower #9	13A14	4900	10	35N	16W	1955	5	3,9
Mount Allen #7	13A7	5700	22	35N	16W	1922	5	3,9
Piegan Pass #6	13A6	5500	15	35N	16W	1922	5	3,9
Ptarmigan #8	13A8	5800	32	36N	16W	1937	5	3,9
			MISSOURI RIVER BASIN					
BEAVERHEAD RIVER								
Bloody Dick	13D10	7600	12	8S	16W	1948	3,4	1
Carter Creek	12D4	7400	22	8S	7W	1963	3,4	1
Gold Stone	13D9	8100	11	8S	16W	1948	3,4	1
Lakeview Canyon	11E4	6930	26	14S	2W	1948	3,4,5	10
Lakeview Ridge	11E3	7400	27	14S	2W	1948	3,4,5	10
Lemhi Pass	13E1	7480	9	10S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	10S	15W	1948	3,4	1
White Pine Ridge	12E1	8850	18	14S	9W	1948	3,4,5	1
RUBY RIVER								
Clover Meadow	11D8	8600	28	9S	2W	1963	3,4,5	1
Divide	12E7	7900	14	12S	4W	1963	3,4,5	1
Notch	12E6	8500	18	1S	4W	1963	3,4,5	1
BIG HOLE RIVER								
Abundance Lake	13D20	8800	7	3S	12W	1963	3,4,5	1
Darkhorse Lake	13D19	8600	4	8S	16W	1963	3,4,5	1
Elk Horn Springs	13D15	8000	15	4S	12W	1935	3,4,5	3
Foolhen	13D21	8500	14	1S	13W	1963	3,4,5	1
Jahnke Creek	13D8	7340	25	7S	16W	1948	3,4	1
JEFFERSON RIVER								
Berry Meadow	12C7	7300	17	5N	5W	1962	3,4	1
Picnic Grounds	12C6	6500	10	5N	6W	1941	2,3,4	4
Pipestone Pass	12B1	7200	10	1N	7W	1938	1,2,3,4,5	1

A/Missouri River Basin cont'd

Drainage Basin & Course Name	Number	Elev.	Location Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates 1/	Measured By 2/
MADISON RIVER								
Call Road	11D7	8050	21	8S	2W	1962	3,4,5	1
Crockett Lake	11D6	8400	20	8S	2W	1962	3,4,5	1
Hebgen Dam	11E5	6550	22	11S	3E	1934	1,2,3,4,5	3
Jack Creek	11D5	6800	13	6S	1E	1961	3,4	1
North Meadow	11D3	7500	23	3S	3W	1961	3,4	1
West Yellowstone	11E7	6700	34	13S	5W	1934	1,2,3,4,5	3
GALLATIN RIVER								
Devil's Slide	10D4	8300	14	5S	6E	1935	2,3,4,5, 6	1
Hood Meadow	10D3	6600	22	4S	6E	1935	2,3,4,5	1
New World	10D1	6900	24	3S	6E	1939	2,3,4	1
Twenty-One Mile	11B6	7150	1	11S	5E	1934	1,2,3,4,5	3
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	3
Crystal Lake	9C1	6100	19	12N	18E	1941	3,4	1
Elk Peak	10C7	8000	10	8N	8E	1963	3,4	1
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	1
Kings Hill	10C1	7500	35	13N	7E	1934	3,4,5	3
Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7
Steeple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3
Ten Mile Creek L.	12C2	6250	13	8N	6W	1935	1,2,3,4,5	3
Ten Mile Creek M.	12C3	6800	13	8N	6W	1934	1,2,3,4,5	3
Ten Mile Creek U.	12C4	8000	19	8N	5W	1935	1,2,3,4,5	3
SUN-TETON-MARIAS RIVERS								
Benchmark	12B6	5500	9	20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1
Five-Bull	12B9	5600	36	20N	10W	1948	3,4	1
Freight Creek	12A1	6000	13	26N	10W	1948	3,4	1
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4,5	3
Waldron Creek	12B2	5600	16	25N	9W	1948	3,4	1
West Fork	12B1	6000	6	25N	9W	1948	3,4	1
Wrong Creek	12B4	5700	32	25N	10W	1949	3,4	1
Wrong Ridge	12B3	6800	17	25N	10W	1949	3,4	1
JUDITH RIVER								
Spur Park	10C6	8000	20	12N	9E	1963	3,4	1
UPPER YELLOWSTONE RIVER								
Bald Ridge	10C5	7500	11	4N	10E	1961	3,4	1
Camp Senis	9D1	7890	2	8S	18E	1937	3,4,5	1
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	6
Crevice Mt.	10D5	8400	22	9S	9E	1935	3,4	2
Gertrude Lake	9D3	9250	10	8S	18E	1961	3,4,5	1
Grizzly Peak	9D5	8400	26	7S	19E	1961	1,2,3,4,5	1
Independence	10D6	8000	22	7S	12E	1940	3,4,5	1
Monument Peak	10D12	9000	22	7S	12E	1961	3,4,5	1
Porcupine R.S.	10C3	6500	10	4N	10E	1938	3,4	1
Timberline Creek	9D4	8850	10	8S	18E	1961	3,4,5	1
Sacajawea	10D10	6550	36	2N	6E	1960	3,4,5	1
West Rosebud	9D2	7500	10	7S	16E	1960	3,4	4
			COLUMBIA RIVER BASIN					
FLATHEAD RIVER								
Desert Mountain	13A2M	5600	24	31N	19W	1956	Monthly	1
Marias Pass	13A5M	5250	34	30N	14W	1950	Monthly	1
CLARK FORK RIVER								
Georgetown Lake	13C19M	6450	6	5N	13W	1962	Monthly	1
Lubrecht Forest	13C14M	4100	11	13N	15W	1961	Monthly	8
BITTERROOT RIVER								
Gibbons Pass	13D18M	7100	4	2S	19W	1962	Monthly	1
			MISSOURI RIVER BASIN					
BEAVERHEAD RIVER								
Lakeview	11E13M	6700	23	14S	2W	1962	Monthly	10
MADISON RIVER								
Red Bluff	11D4M	4800	7	3S	1E	1961	Monthly	7
GALLATIN RIVER								
College Site	11B2M	4856	18	2S	5E	1956	Monthly	1
YELLOWSTONE RIVER								
Battle Ridge	10D11M	6020	32	2N	7E	1960	Monthly	1
Northeast Entrance	10D13M	7350	33	9S	14E	1962	Monthly	6
Shields River	10C4M	5850	3	4N	10E	1960	Monthly	1

1/ Numerals 1,2,3,4,5,5½,6 refer to January 1, February 1, March 1, April 1, May 1, May 15 and June 1.

2/ Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. Montana State Forestry School
9. Dominion Water & Power Bureau
10. U. S. Fish and Wildlife Service

M - Soil Moisture
A - Aerial Marker

USDA-SCS-LINCOLN, NEBR 1962

5,M-11,484

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	COLUMBIA RIVER BASIN					
	KOOTENAI RIVER					
3030	Libby (at)	Apr-Sept	5844	76	6632	7723
		Apr-July	4987	75	5707	6694
3050	Leonia (at)	Apr-Sept	6633	74	7605	8907
		Apr-July	5739	73	6603	7817
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	Apr-Sept	1456	75	1678	1942
		Apr-July	1342	76	1540	1769
		Apr-June	1140	76	1356	1491
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	Apr-Sept	1498	80	1702	1882
		Apr-July	1390	80	1582	1747
		Apr-June	1183	80	1402	1487
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (nr)(17)	Apr-Sept	1946	85	2465	2297
		Apr-July	1840	85	2358	2180
		Apr-June	1620	85	2132	1901
	FLATHEAD RIVER					
3630	Columbia Falls (at)(17)	Apr-Sept	5038	80	6030	6299
		Apr-July	4668	80	5631	5846
		Apr-June	4012	80	5009	4993
3720	Polson (near)(18)	Apr-Sept	5987	80	7073	7463
		Apr-July	5557	80	6614	6939
		Apr-June	4730	80	5880	5896
	SWAN RIVER					
3700	Big Fork (near)	Apr-Sept	582	91		641
		Apr-July	515	91		568
		Apr-June	419	91		460
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	881	88	1090	1000
		Apr-July	787	87	993	907
		Apr-June	670	87	877	775
	FLINT CREEK					
3295	Maxville (at)	Apr-Sept	42.0	90	39.1	46.4
		Apr-July	32.0	90	27.8	35.4
	BOULDER CREEK					
3300	Maxville (at)	Apr-Sept	24.8	88	24.8	28.2
		Apr-July	22.8	88	22.7	25.8
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	Apr-Sept	74.4	93		80.2
		Apr-July	67.0	93		72.1

(17) Corrected for storage in Hungry Horse Reservoir.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	CLARK FORK RIVER					
3404	Milltown (above)(14)	Apr-Sept	704	86	769	815
		Apr-July	619	86	677	716
		Apr-June	523	86	590	609
3405	Missoula (above)	Apr-Sept	1585	87	1859	1814
		Apr-July	1406	87	1660	1620
		Apr-June	1193	86	1467	1384
3530	Missoula (below)	Apr-Sept	2613	78	3323	3361
		Apr-July	2368	78	3025	3059
		Apr-June	2018	77	2686	2608
3545	St. Regis (at)	Apr-Sept	3405	75	4416	4549
		Apr-July	3070	74	4013	4140
		Apr-June	2617	74	3566	3550
3890	Plains (near)(18)	Apr-Sept	9660	78	11956	12337
		Apr-July	8744	77	11030	11316
		Apr-June	7450	77	9775	9625
3920	Whitehorse Rapids (at)(19)	Apr-Sept	10792	77	13324	13932
		Apr-July	9800	77	12244	12763
		Apr-June	8313	77	10846	10816
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(15)	Apr-Sept	139	79		176
		Apr-July	130	79		164
	BITTERROOT RIVER					
3440	Darby (near)	Apr-Sept	430	73	548	587
		Apr-July	398	73	510	547
		Apr-June	348	73	459	477
3528	Missoula (near)(16)	Apr-Sept	1028	66	1464	1557
		Apr-July	962	66	1365	1450
		Apr-June	825	66	1219	1244
	BLODGETT CREEK					
3475	Corvallis (near)	Apr-Sept	41.2	88		46.7
		Apr-July	39.2	88		44.4

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner.
(15) Corrected for storage in Painted Rocks Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.
(19) Corrected for storage in Hungry Horse, Flathead Lake and Noxon Reservoirs.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER BASIN					
	RED ROCK RIVER					
0110	Kennedy Ranch (at)	Apr-Sept	42.2	55	106	76.6
		Apr-July	38.9	55	97	70.8
0125	Monida (near)(1)	Apr-Sept	43.7	51	110	86.4
		Apr-July	41.4	50	101	82.2
	BIG HOLE RIVER					
0255	Melrose (near)	Apr-Sept	650	85	671	770
		Apr-July	602	85	619	714
	BOULDER RIVER					
0330	Boulder (near)	Apr-Sept	69.3	87		79.9
		Apr-July	66.4	87		76.5
	JEFFERSON RIVER					
0345	Sappington (at)	Apr-Sept	817	76		1074
		Apr-July	726	76		958
	MADISON RIVER					
0375	West Yellowstone (near)	Apr-Sept	177	82		216
		Apr-July	134	81		165
0385	Grayling (near)(2)	Apr-Sept	346	77		448
		Apr-July	273	77		357
0410	McAllister (near)(3)	Apr-Sept	575	76		756
		Apr-July	465	76		613
	GALLATIN RIVER					
0435	Gateway (near)	Apr-Sept	430	94		459
		Apr-July	372	94		395
	HYALITE CREEK					
0500	Hyalite R. S. (at)(4)	Apr-Sept	39.8	110		36.1
		Apr-July	34.3	110		31.0
	GALLATIN RIVER					
0525	Logan (at)	Apr-Sept	438	96		492
		Apr-July	381	96		422

(1) Corrected for storage in Lima Reservoir.
(2) Corrected for storage in Hebgen Lake.
(3) Corrected for storage in Hebgen and Ennis Lakes.
(4) Corrected for storage in Middle Creek Reservoir.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER					
0545	Toston (at)(3)	Apr-Sept	1813	77		2342
		Apr-July	1560	77		2030
0908	Fort Benton (at)(5)	Apr-Sept	2590	72		3599
		Apr-July	2204	72		3076
1095	Virgelle (at)(6)	Apr-Sept	3024	69		4393
		Apr-July	2624	69		3803
1150	Zortman (near)(6)	Apr-Sept	3357	70		4806
		Apr-July	2879	70		4143
1320	Fort Peck Dam (below)(7)	Apr-Sept	3126	66		4761
		Apr-July	2711	65		4181
1770	Wolf Point (near)(7)	Apr-Sept	3422	65		5261
		Apr-July	2971	64		4652
3300	Williston, N.D. (nr)(8)	Apr-Sept	9623	77	13381	12562
		Apr-July	8389	75	11841	11101
	PRICKLY PEAR CREEK					
0615	Clancy (near)	Apr-Sept	19.4	81		23.9
		Apr-July	17.0	82		20.8
	NORTH FORK SUN RIVER					
0785	Augusta (near)	Apr-Sept	171	72		239
		Apr-July	159	72		222
	SUN RIVER					
0786	Gibson Dam (at)(10)	Apr-Sept	436	74	616	588
		Apr-July	396	74	569	538
	MARIAS RIVER					
0995	Shelby (near)	Apr-Sept	401	61	419	659
		Apr-July	363	60	391	605
	SOUTH FORK MUSSELSHELL R.					
1185	Martinsdale (above)	Apr-Sept	54.0	100	49.8	53.6
		Apr-July	51.6	100	46.0	51.4
	MILK RIVER					
1350	Eastern Crossing (at)	Mar-Sept	186	73		255

(3) Corrected for storage in Hebgen and Ennis Lakes.
(5) Corrected for storage in Canyon Ferry Reservoir.
(6) Corrected for storage in Canyon Ferry and Tiber Reservoirs.
(7) Corrected for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
(8) Corrected for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill and Boysen Reservoirs.
(10) Corrected for storage in Gibson Reservoir and diversions.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	YELLOWSTONE RIVER					
1915	Corwin Springs (at)	Apr-Sept	1699	86	2266	1980
		Apr-July	1422	86	1903	1649
1925	Livingston (near)	Apr-Sept	1943	86	2562	2252
		Apr-July	1612	86	2148	1863
2145	Billings (at)	Apr-Sept	3592	84	4577	4261
		Apr-July	3085	84	3854	3657
3090	Miles City (at)(12)	Apr-Sept	5673	84	7114	6721
		Apr-July	4968	84	6170	5883
3295	Sidney (near)(12)	Apr-Sept	5860	85	8124	6921
		Apr-July	5166	84	7190	6137
	SHIELDS RIVER					
1935	Clyde Park (at)	Apr-Sept	95.0	86	85.9	111
		Apr-July	88.8	86	77.4	103
	STILLWATER RIVER					
2050	Absarokee (near)(11)	Apr-Sept	545	88	637	620
		Apr-July	461	88	519	523
	CLARKS FORK RIVER					
2075	Chance (at)	Apr-Sept	506	82	622	617
		Apr-July	457	83	558	552
2085	Edgar (at)	Apr-Sept	526	81	678	652
		Apr-July	469	82	585	575
	ROCK CREEK					
2095	Red Lodge (near)	Apr-Sept	97.5	87	107	112
		Apr-July	74.7	87	82.8	86.3

(11) Corrected for storage in Mystic Lake.
(12) Corrected for storage in Buffalo Bill and Boysen Reservoirs.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

SOIL MOISTURE DATA

AS OF MARCH 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
			COLUMBIA RIVER BASIN					
Flathead								
13A2M	Desert Mountain	5600	54	8.4	2/26	7.5	6.3	7.1
13A5M	Marias Pass	5250	54	6.5	2/27	6.0	5.6	5.3
Clark Fork								
13C15M	Georgetown Lake	6450	48	8.3	2/28	3.1	-	-
Bitterroot								
13D18M	Gibbons Pass	7100	48	7.1	3/1	5.8	-	-
			MISSOURI RIVER BASIN					
Beaverhead								
11E13M	Lakeview	6700	48	15.3	3/4	9.7	-	-
Madison								
10D4M	Red Bluff	4800	40	4.7	3/2	2.5	2.8	-
Gallatin								
11D2M	College Site	4856	54	14.5	3/1	13.3	11.6	9.0
Yellowstone								
10D11M	Battle Ridge	6020	48	15.4	2/27	13.8	14.3	-
10D13M	Northeast Entrance	7350	48	9.4	3/2	7.1	-	-
10C4M	Shields River	5850	48	17.8 1/	2/27	15.3	12.1	-

1/ Capacity and previously published revised data.

**AVERAGE FOR PERIOD OF RECORD

SOIL MOISTURE DATA

As of [illegible] 1, 19[illegible]

No.	Site	Elevation	Soil moisture-tail: Water content	Soil moisture-tail: Dry weight	Soil moisture-tail: Moisture	Soil moisture-tail: Date	Water storage: Depth	Water storage: Moisture	Water storage: Date	Water storage: Variance
FOOTHILLS [illegible] SITES										
Ponderosa										
1[illegible]2M	Jarvis Creek[illegible]	8[illegible]0	5[illegible]	8.4	2/2[illegible]	7.5	6.3	7.1		
1[illegible]4M	Barrett Ranch	5[illegible]0	5[illegible]	[illegible]	[illegible]/27	6.0	5.6	5.3		
Chaparral										
1[illegible]0M	Concentrated Logs	6[illegible]0	4[illegible]	8.3	[illegible]/[illegible]	3.3	-			
Riparian										
1[illegible]0M	Gibbons Pass	[illegible]	14	7.1	3/2	5.6	-			
[illegible] SITES [illegible]										
Ponderosa										
1[illegible]2M	Lakeview	6[illegible]0	2[illegible]	1[illegible].3	2/1[illegible]	9.7	-			
Chaparral										
1[illegible]0M	Red Bluff	[illegible]	4[illegible]	6.7	3/2	2.4	[illegible]	-		
Meadow										
11[illegible]0M	Orchard Grove	4[illegible]5	5[illegible]	14.3	3/2	13.3	11.6	9.0		
Foothills										
1[illegible]0M	Bertha Ridge	[illegible]	1[illegible]	15.4	3/27	13.3	12.3	-		
1[illegible]0M	Moccasin Mountain	7[illegible]0	4[illegible]	0.[illegible]	3/2	7.1	-			
1[illegible]0M	Bertha Ridge	3[illegible]0	[illegible]	[illegible]	3/27	13.3	12.3	-		

1/ Capacity and permanent [illegible] assumed [illegible].

SNOW SURVEY DATA

AS OF MARCH 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
	COLUMBIA RIVER BASIN						
KOOTENAI RIVER							
14A4	Brush Creek	5000	2/21	22	5.2	10.2	13.4*
Can 10	Fernie	3500	2/27	4	2.0	6.3	9.1
Can 12A	Field	4200	2/27	20	4.5	4.8	5.5
Can 43	Gray Creek	5100	2/27	50	14.3	16.1	16.7*
Can 33	Kicking Horse	5400	3/1	47	11.9	10.9	13.3*
Can 20B	Kimberley	3800	2/28	16	4.4	7.7	7.6
Can 32	Marble Canyon	5000	2/28	41	7.0	10.8	13.2*
Can 10B	Morrissey Ridge	6100		No Report		21.0	-
Can 10A	New Fernie	4100	2/27	24	7.4	12.8	13.1*
15A1	Red Mountain	6000	2/27	40	11.9	14.4	18.0
Can 8A	Sinclair Pass	4500	2/28	14	2.9	4.6	5.7*
Can 20A	Sullivan Mine	5100	2/27	35	9.2	11.3	13.1*
Can 41	Upper Elk River	4400	2/28	6	2.7	4.5	8.2*
14A7	Weasel Divide	5450	2/28	71	25.2	27.9	29.6*
FLATHEAD RIVER							
13B14A	Basin Creek	5000	2/22	12	4.0	11.3	9.2*
14B3	Bassoo Peak	5150	2/25	16	5.0	11.0	-
13B3	Big Creek	6750	2/28	94	35.0	38.4	36.6
13A17	Camp Misery	6400	2/26	79	27.3	34.5	-
13A2	Desert Mountain	5600	2/26	33	9.4	13.4	14.1*
13B4	Fatty Creek	5500	2/28	44	14.3	19.0	-
14A9	Griffin Creek Divide	5150	2/27	20	5.0	12.8	-
14A3	Hell Roaring Divide	5770	3/1	69	22.0	23.0	26.9*
13B13A	Holbrook	4530	2/22	19	6.4	13.4	9.9*
14A6	Kishenehn	3886	2/25	19	5.9	8.5	10.5*
14A5	Logan Creek	4300	2/21	19	4.4	9.4	9.0*
13A5	Marias Pass	5250	2/27	30	9.5	13.4	17.4
13A16	Mineral Creek	4000	2/28	36	10.6	15.1	20.4*
13B7	North Fork Jocko	6330	3/1	105	34.4	43.0	38.3
13A13	Quintonkon	3800		No Report		14.6	13.9*
13B2	Spotted Bear Mt.	7000	2/22	28	7.6	13.6	14.8*
13A10	Strawberry Lake	6500	2/22	66	23.3	31.8	33.7*
13B1	Trinkus Lake	6500	2/22	72	24.2	34.0	36.3*
13A12	Trout Lake	3600	2/25	23	7.5	13.3	15.4*
13B11	Twin Creeks	3580	2/25	19	6.0	10.8	11.2*
13B5	Upper Holland Lake	7000	2/22	67	20.0	34.5	28.4*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1963

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
CLARK FORK RIVER							
13C13	Black Pine	7100	2/26	35	10.8	10.7	-
13B10	Coyote Hill	4200	3/1	28	7.4	11.8	9.9*
13C9	El Dorado Mine	7800	2/25	52	17.4	17.9	17.3*
13C11	Fred Burr Pass	8000	3/1	68	21.2	19.6	22.4*
13C10	Gold Creek Lake	7200	2/25	38	12.3	13.0	13.4*
15C1	Hoodoo Creek	6200	2/26	77	28.0	-	46.0
13C4	Intergaard	6450	3/1	29	6.8	8.1	6.6
15B2	Lookout	5250	2/28	60	19.3	31.4	33.7*
13C8	Lubrecht Forest #6	4040	3/3	11	3.3	7.8	3.4*
13C12	Red Lion	7000	3/1	57	15.6	12.5	14.4*
13C3	Skalkaho Summit	7259	2/26	55	18.4	21.8	-
13C2	Slide Rock Mountain	7100	2/27	40	11.4	12.8	12.5*
13C5	Southern Cross	6500	3/1	22	5.7	7.1	5.0
13C7	Storm Lake	7780	2/28	39	11.6	12.0	11.6*
13C6	Stuart Mill	6500	3/1	23	6.4	6.4	5.6
13C1	Stuart Mountain	7400	3/2	77	17.8	25.9	27.4*
14B1	TV Mountain	6800	3/1	52	14.2	17.2	14.9*
BITTERROOT RIVER							
13C16	Ambrose	6475	2/25	32	10.6	12.8	-
13D1	East Fork R. S.	5400	3/1	22	5.8	6.2	6.5*
13D2	Gibbons Pass	7100	2/27	55	16.6	19.5	22.2
14C5	Lolo Pass	5230	2/25	49	17.5	34.4	32.9*
14C7	Lost Horse	5940	2/27	61	17.8	27.0	-
13D16	Moose Creek	6200	2/27	36	8.0	12.6	16.1
14D2	Nez Perce Camp	5580	2/28	32	9.0	13.8	12.4*
14D1	Nez Perce Pass	6575	2/28	33	9.0	14.4	16.8*
14C6	Powell R. S.	4230	2/25	21	7.3	13.7	14.6*
14C4	Savage Pass	6600	2/25	52	18.6	24.2	-
14C8	Twin Lakes	6510	2/27	88	27.3	36.2	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
	MISSOURI RIVER BASIN						
BEAVERHEAD RIVER							
13D10	Bloody Dick	7600	2/26	30	7.6	9.8	10.0*
12E3	Camp Creek	6800	2/26	13	3.0	9.2	9.2
12D4	Carter Creek	7400	2/27	13	2.6	-	-
13D9	Gold Stone	8100	2/26	40	10.8	13.4	12.9*
11E12	Kilgore	6200	2/27	15	3.6	12.1	9.5
11E4	Lakeview Canyon	6930	2/27	25	5.8	12.6	10.5*
11E3	Lakeview Ridge	7400	2/27	21	5.6	10.7	8.9*
13E1	Lemhi Pass	7480	2/25	23	6.0	7.0	7.5*
13E2	Trail Creek	7090	2/25	20	4.6	6.1	6.7*
12E1	White Pine Ridge	8850	2/22	16	2.8	4.8	4.6*
RUBY RIVER							
11D8	Clover Meadow	8600	2/22	37	8.6	-	-
12E7	Divide	7900	2/22	23	6.4	-	-
12E6	Notch	8500	2/22	28	7.0	-	-
BIG HOLE RIVER							
13D20	Abundance Lake	8800	2/22	47	12.2	-	-
13D19	Darkhorse Lake	8600	2/22	60	17.9	-	-
13D15	Elk Horn Springs	8000	2/27	34	7.7	10.1	9.1
13D21	Foolhen	8500	2/22	41	12.3	-	-
13D8	Jahnke Creek	7340	2/26	24	6.1	7.0	9.4*
JEFFERSON RIVER							
12C7	Berry Meadow	7300	2/28	24	6.4	8.0	-
12C6	Picnic Grounds	6500	3/1	21	4.6	5.1	4.7*
12D1	Pipestone Pass	7200	3/1	19	4.4	5.3	4.4

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
MADISON RIVER							
11E9	Big Springs	6500	2/27	35	9.2	22.8	20.4
11D7	Call Road	8050	2/22	30	6.8	-	-
11D6	Crockett Lake	8400	2/22	31	7.4	-	-
11E5	Hebgen Dam	6550	2/27	29	6.4	12.1	11.2
11E10	Island Park	6315	2/27	31	7.8	17.6	15.8
11D5	Jack Creek	6800	2/27	21	5.0	7.0	-
10E2	Norris Basin	7500	2/27	33	8.1	9.9	9.3*
11D3	North Meadow	7500	2/27	20	5.3	9.6	-
11E8	Valley View	6500	2/27	32	8.4	15.8	13.4*
11E7	West Yellowstone	6700	2/28	23	4.9	15.0	11.3
GALLATIN RIVER							
10D4	Devil's Slide	8100	3/2	72	19.8	21.8	16.3
10D3	Hood Meadow	6600	3/2	36	9.7	9.4	7.2
10D1	New World	6700	2/23	29	8.2	9.0	8.3*
11E6	Twenty-One Mile	7150	2/28	32	7.6	19.0	16.0
MISSOURI RIVER (Main Stem)							
12C5	Chessman Reservoir	6200	2/26	7	2.1	3.3	4.3
9C1	Crystal Lake	6100	3/1	51	15.4	12.1	9.9
10C7	Elk Peak	8000	2/27	42	12.5	-	-
10C2	Grasshopper	7000	2/27	17	5.2	5.5	4.3
10C1	Kings Hill	7500	2/26	30	6.7	10.1	11.5
9A1	Rocky Boy	5200	3/1	24	6.2	4.4	4.8
12C1	Stemple Pass	6900	2/27	27	7.1	9.1	9.2
12C2	Tenmile, Lower	6250	2/26	17	5.0	6.6	6.3
12C3	Tenmile, Middle	6800	2/25	29	8.4	9.0	9.2
12C4	Tenmile, Upper	8000	2/25	36	10.6	11.5	11.9
SUN-TETON-MARIAS RIVERS							
12B8	Benchmark	5500	2/19	9	2.4	7.5	8.1*
12B6	Cabin Creek	5400	2/22	14	4.3	8.3	6.8*
12B9	Five-Bull	5600	2/19	4	0.9	5.6	6.2*
12A1	Freight Creek	6000	2/20	32	8.7	12.7	14.9*
12B5	Gates Park	5300	2/22	19	3.8	10.4	9.9*
12B7	Goat Mountain	7000	2/28	23	6.6	11.8	10.7
12B2	Waldron Creek	5600	2/19	10	2.8	4.6	6.5*
12B1	West Fork	6000	2/20	21	6.3	-	14.0*
12B4	Wrong Creek	5700	2/22	27	7.8	14.8	14.8*
12B3	Wrong Ridge	6800	2/22	42	11.3	17.5	20.4*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

No.	Name	Elevation	Water Content	Last Year	30-Year Average	% of Last Year	% of 30-Year Average
				Snow Course Data			
	MARTHOT RIVER						
1127	Alta Cabin	6500	2/27	30	9.2	22.2	20.4
1127	Ski Lodge	5140	2/22	30	6.3	-	-
1130	Grossman Lake	8500	2/22	22	7.4	-	-
1133	Bolgen Inn	6500	2/27	29	[illegible]	14.3	12.3
1133	Lateral Peak	5,350	2/27	30	7.3	17.5	13.8
1133	Jane Creek	5,850	2/22	24	8.1	7.3	-
1134	Alberta Bridge	5500	2/27	22	3.1	5.5	0.2
1134	Port Cabin	7500	2/27	28	3.8	5.0	-
1142	Vail Ski Area	8500	2/27	12	3.4	22.5	11.4
1142	West Vail	5200	2/28	23	4.7	20.5	11.3
	GRIFFITH RIVER						
1004	Danville Junction	5,300	2/23	22	12.0	22.2	[illegible]
1003	Black Mountain	8000	2/2	30	8.7	9.4	7.2
1004	New Meadow	5700	2/23	29	4.5	9.0	5.3
1144	Twenty-Mile Mill	7,450	2/23	12	7.6	24.0	14.0
	WISSOURI RIVER (Mont. Area)						
1203	Canyon Ferry	4500	2/26	7	2.2	3.3	4.[illegible]
901	Gates Creek	[illegible]	2/1	52	14.4	12.3	9.[illegible]
1017	Elk Park	[illegible]	2/27	44	2.2	-	-
1022	Stewardson	7000	2/22	17	4.2	5.3	6.0
1021	Kings Hill	5300	2/23	30	6.7	10.1	11.5
941	Tenmile Creek	5200	2/2	41	[illegible]	[illegible]	4.0
1201	Helena Lake	4900	2/27	27	1.1	4.1	3.8
1202	Ivanhoe, Lower	6250	2/26	19	3.0	6.6	[illegible]
1203	Tenmile, Middle	6000	2/26	35	6.4	9.0	6.2
1204	Tenmile, Upper	6500	2/26	36	10.0	11.5	12.0
	NON-FEDERAL AS FURNISHED						
1288	Ken-Tucky	5500	2/10	4	2.4	1.5	2.1
1288	Rubin Creek	6400	2/22	14	4.3	8.1	6.0
1290	Fish-Bill	5400	2/27	4	0.0	2.0	0.0
1241	Twelve Lakes	6000	[illegible]	32	8.1	14.7	12.0
1295	Ocean View	4300	2/22	18	3.8	10.4	9.0
1287	Cook Meadow	7000	2/28	23	4.6	11.8	10.7
1286	Mt. Bross Creek	5400	2/27	16	2.8	4.0	5.0
1281	Bear Pole	8000	2/27	21	4.3	-	1.0
1284	Strong School	7700	2/26	31	7.2	14.8	14.0
1283	Strong Ridge	8500	2/27	42	31.2	17.2	10.4

SNOW SURVEY DATA

AS OF MARCH 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
JUDITH RIVER							
10C6	Spur Park	8000	2/28	52	14.5	-	-
MILK RIVER (Cypress Hills)							
10AA2	Cress Day B	3450	3/4	2	0.8	0.4	1.8*
9AA1	Cypress Park C	4000	3/4	9	3.4	2.2	5.2*
10AA1	Elkwater Lake A	4100	3/4	8	1.9	0.8	2.7*
7AA1	Val Marie D	2700	3/5	0	0.0	1.4	1.5*
UPPER YELLOWSTONE RIVER							
10C5	Bald Ridge	7500	2/26	33	9.5	9.9	-
9D1	Camp Senia	7890	3/4	22	4.7	7.9	5.5*
10E3	Canyon	7750	2/28	42	10.2	16.3	13.8*
10D5	Crevice Mountain	8400	3/1	34	7.1	8.5	8.2
10E6	East Entrance	7000	2/28	36	8.0	8.9	10.8*
9D3	Gertrude Lake	9250	3/4	41	10.4	14.8	-
9D5	Grizzly Peak	8400	2/28	45	12.8	22.2	-
10D6	Independence	8000	2/25	47	13.8	18.4	13.7*
10E4	Lake Camp #2	7850	2/27	23	4.4	12.0	10.0
9E1	Lodgepole	8200	3/1	37	8.7	9.7	10.6*
10E1	Lupine Creek	7300	2/27	25	5.4	12.4	9.4*
10D12	Monument Peak	9000	2/25	58	14.9	25.6	-
10D7	Northeast Entrance (Cooke City)	7400	2/28	30	7.4	8.1	7.8
10C3	Porcupine R. S.	6500	2/26	22	5.8	8.0	5.9
10D10	Sacajawea	6550	3/4	44	12.4	11.2	-
10E5	Sylvan Pass	7100	2/28	38	8.7	10.5	13.4*
10E7	Thumb Divide	7900	2/27	48	12.8	24.5	21.4*
9D4	Timberline Creek	8850	3/4	38	9.8	18.0	-
9D2	West Rosebud	7500		No Report		10.4	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

As of August 1, 1963

Station Number	Station Name	Elevation Feet	Snow Course Date	Snow Course Depth Inches	Snow Course Water Content Inches	Snowpack Index Depth Percent	Snowpack Index Water Content Percent	Last Year's Water Content Percent
INDIAN RIVER								
1006	Spur Cove	6500	7/24	52	16.5	-	-	-
KITH RIVER (Grayson Ft. Lake)								
10142	Cowan Dam 3	4400	3/4	2	0.2	0.4	0.4	2.0*
9A11	Grayson Dam 2	4500	3/4	0	0.0	0.0	0.0	3.2*
10141	Kilgore Lake A	4100	3/4	0	0.0	0.0	0.0	0.0*
9A1	Van Alstyne 3	4700	3/4	0	0.0	0.0	0.0	1.4*
LOCKE MILLCREEK (Lake)								
1005	Bell Ridge	7500	3/30	32	9.3	9.3	9.3	-
901	Cabin Camp	7800	3/4	22	4.4	7.1	5.3*	
1003	Canyon	7750	3/29	42	10.2	10.2	13.3	13.8*
1008	Grayson Mountain	8300	3/29	34	7.1	8.5	8.5	8.2
1006	East Fork	7000	3/29	34	8.0	8.5	10.8	10.8*
905	Gunsite Lake	6250	3/4	21	10.4	14.8	14.8	-
905	Gunsite Peak	8100	3/29	45	12.8	12.8	8.2	-
1006	Longmeadow	8700	3/29	41	13.4	18.4	13.7*	
1004	Lake Creek #5	7850	3/27	25	4.4	12.8	10.0	
901	Longsdale	8400	3/4	37	8.7	9.7	10.0*	
1001	Virgina Creek	7400	3/27	25	6.4	12.4	8.4*	
1001B	Moonshine Fork	9300	2/25	50	14.0	26.5	-	
1007	Northwest Overpass (Coast Gulf)							
1004	Powerplant No. 2	7100	2/28	30	7.0	8.5	7.3	
1001D	Sandstone	6400	2/25	22	5.8	8.0	5.9	
1005	Stylish Camp	6850	3/4	44	14.4	11.2	-	
1007	Tanner Camp	7100	2/28	34	8.7	10.7	13.6*	
904	Timber Lake Trail	7400	3/4	48	12.8	24.7	21.4*	
902	West Cowan	6300	3/4	32	9.0	17.0	-	
		7500		35 Average		10.4	-	

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1963

(1000 Acre Feet)

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE THIS YEAR	USEABLE STORAGE LAST YEAR	USEABLE STORAGE AVERAGE
COLUMBIA RIVER BASIN					
Flathead	Hungry Horse	3,428.0	2,772.0	2,172.0	2,369.0**
	Flathead Lake	1,791.0	1,126.0	806.5	768.2
	Camas 1/	45.2	28.1	26.5	25.1
	Mission Valley 2/	100.3	31.0	24.2	35.5
Clark Fork	Georgetown Lake	31.0	24.9	22.6	23.0
	Noxon	334.6	297.9	251.5	-
Bitterroot	Como	34.9	22.8	13.8	10.7
MISSOURI RIVER BASIN					
Beaverhead	Lima	84.0	24.5	16.5	32.8
Ruby	Ruby	38.8	22.5	23.2	27.2**
Madison	Hebgen Lake	384.8	249.0	109.6	213.9
	Ennis Lake	41.0	39.3	38.8	35.9
Gallatin	Middle Creek	8.0	4.7	2.5	3.8**
Missouri	Canyon Ferry	2,043.0	1,973.0	1,285.0	1,558.0**
	Hauser & Helena	61.9	45.5	44.1	53.8
	Lake Helena	10.4	5.0	4.6	8.1**
	Holter Lake	81.9	58.7	51.8	59.2
	Smith River	10.7	8.2	2.2	5.6**
	Ackley Lake	5.8	3.7	-	3.9
	Durand	7.0	6.4	1.4	4.9
	Martinsdale	23.1	8.6	1.5	9.8
	Deadman's Basin	72.2	52.5	10.0	46.9**
	Fort Peck	19,410.0	10,022.0	8,185.0	11,178.0
Sun-Teton	Gibson	105.0	43.0	39.0	63.3
	Willow Creek	32.3	25.7	10.6	19.2
	Pishkun	32.0	18.3	17.0	18.8
Marias	Lower Two Medicine	16.6	0	0	0
	Four Horns	19.2	14.3	14.0	8.6
	Swift	30.0	12.6	16.8	23.1
	Lake Francis	112.0	65.6	76.0	94.6
	Tiber	1,313.0	650.2	613.3	632.7**
Milk	Fresno	127.2	43.4	17.3	64.1
	Nelson	66.8	44.4	15.2	34.4
	Lake Sherburne	66.1	36.3	-	20.1
Yellowstone	Mystic Lake	20.8	8.6	7.4	8.6
	Tongue River	68.0	43.7	52.4	9.0
	Cooney	27.5		15.1	9.1

1/ Sum of four small reservoirs on west side of Flathead Lake.

2/ Sum of eight small reservoirs in Mission Valley not including Jocko Lake.

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). **AVERAGE FOR PERIOD OF RECORD

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region I, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska
Riverdale, N. D.

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Fish & Wildlife Service
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

Montana Power Company
Butte, Montana

Agricultural Experiment Station
North Montana Branch Station
Havre, Montana

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Helena, Montana

National Park Service
Yellowstone National Park
Glacier National Park

Montana Experiment Station
Montana State College
Bozeman, Montana

Bonneville Power Administration
Portland, Oregon

Montana State School of Forestry
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Missoula, Montana

Soil Conservation Service
Montana, Wyoming, Idaho

Soil Conservation Districts
Montana Counties

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Missoula, Montana

Water Rights Branch
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COOPERATIVE SNOW SURVEYS

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